TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
3776

In Re Application Of: **HAASE, B., ET AL**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/593,595	09/21/2006	ALSOMIRI, I.	278	3662	1470

Invention: **DEVICE AND METHOD FOR OPTICAL DISTANCE**

COMMISSIONER FOR PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed on:
04/15/2009

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Dated: **06/15/2009**

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UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Alsomiri, Isam A. Art Unit: 3662 Docket No. 3776

In re:

Applicant: HAASE, BJOERN

Serial No.: 10/593,595

Filed: September 21, 2006

BRIEF ON APPEAL

June 15, 2009

Commissioner for Patents
P O Box 1450
Alexandria, VA 22313-1450

This is a Brief on Appeal from the rejection of Claims 1-13 by the primary Examiner.

REAL PARTY IN INTEREST

The real party in interest in this application is Robert Bosch GmbH, having a business address of Postfach 30 02 20, D-70442 Stuttgart, Germany.

RELATED APPEALS AND INTERFERENCES

There are no prior and pending appeals, interferences or judicial proceedings known to appellant, the appellant's legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

In the present application there are Claims 1-14.

The claims were rejected by the Examiner in the final Office Action.

Claims 1-14 are the claims which are appealed from the final rejection by the Examiner.

STATUS OF AMENDMENTS

In this application the final Office Action was issued on January 15, 2009.

Subsequently to the final Office Action, no amendments have been filed.

SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1, the broadest claim on file, defines the device for optical distance measurement, in particular a device functioning in accordance with the phase measurement principle as disclosed for example on page 4 in lines 11-21 of the specification and shown in Figures 1 and 2.

The device in accordance with the present invention has at least one transmission unit (12) which is equipped with at least one light source (22, 24) for transmitting modulated optical measurement radiation (16) toward a target object (20). This is disclosed on page 7, in lines 10-20 and on page 9, in lines 7-8 and shown in Figures 1 and 2.

The device further has a reception unit (18) for receiving the optical measurement radiation returning from the target object (20). This is disclosed on page 8 in lines 25-26 and on page 9, in lines 9-12 and shown in Figures 1 and 2.

The device in accordance with the present invention further has means (51, 53, 55, 68) that enable a measurement of distances between the device and a target object (20') by means of a triangulation method. This is disclosed in the paragraph bridging pages 9 and 10 of the specification and shown in Figure 1, and also on page 12 in lines 16-20 and shown in Figure 2, correspondingly.

Claim 11 defines a method for optical distance measurement in which it is possible to switch back and forth between a phase measurement method for determining a distance of a distance measuring device from a target object (20, 20') and a triangulation method for determining this distance.

These features are disclosed for example on page 5 in lines 10-14 and also on page 9 in lines 30-31 through page 10, lines 1-4, and shown in Figures 1 and 2.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

In the final Office Action Claims 1-3, 6-7, 9 and 11-14 were rejected under 35 USC 102(b) over the U.S. patent publication to Burlingham et al or the British patent document to Born et al.

The first ground of rejection to be reviewed on appeal is therefore whether the above listed Claims 1-3, 6, 7, 9 and 11-14 can be considered as anticipated by the Burlingham reference or Born reference.

In the Final Action Claims 4, 5, 8 and 10 were rejected under 35 USC 103(a) as being unpatentable over the Burlingham reference or the Born reference.

The second ground of rejection to be reviewed on appeal is whether Claims 4, 5, 8 and 10 can be considered as being unpatentable under 35 USC 103(a) over the Burlingham reference or the Born reference.

ARGUMENT

Argument related to first ground of rejection to be reviewed on appeal.

Claims 1 and 11 and their rejection over the Burlingham reference.

In the Office Action the Examiner indicated that in his opinion the Burlingham reference disclosed a device for optical distance measurement.

It cannot be understood how the Examiner came to the conclusion that Figures 1 and 2 of this reference disclose a device for optical distance measurement for determination of distances between the device and a target by a triangulation method. Figures 1 and 2 do not disclose this feature. In Figure 2 reference "24" identifies a unit of the device, for determination of an angular position of the device. For this purpose the azimutal angle and the height angle of the device relative to a definite normal is determined. This is done to determine the normal distance to a target, if the measurement is performed not along a normal, but along a line that is inclined to the normal in azimutal or vertical direction, or in other words with an inclined measuring device. The longitudinal measurement is performed however either with a pulse time-of-flight method or the equivalent phase displacement method.

Moreover, the Examiner stated that in the Burlingham reference, in particular in paragraph 19, it is stated that the distance measurement can be performed for example by an optical triangulation or a phase difference measurement or a time-of-

flight measurement, wherein such a distance measurement is correlated with an inclination or angle measurement.

Contrary to the Examiner's opinion, the Burlingham reference however does not disclose a device for optical distance measurement, which contains a light source for transmitting a modulated optical measurement radiation and additionally means for measuring distances by means of a triangulation method.

From the Burlingham reference a conclusion can be clearly made that the distance measurement is performed via optical triangulation or phase difference measurements or time-of-flight measurements.

A combination of these measurement principles is not disclosed in the Burlingham reference, contrary to the Examiner's opinion.

A distance measurement for the determination of the phase difference or the determination of the time-of-flight presupposes a modulated optical measurement signal. A distance measurement by means of optical triangulation requires no modulation of the optical measurement signal.

Claim 1 specifically defines a device for optical distance measurement, which transmits the modulated optical measurement radiation, which is suitable for a phase difference measurement and in addition has means, which make possible a measurement of distances via a triangulation method.

This combination of features is not disclosed in the Burlingham reference and cannot be considered as obvious from this reference. This reference clearly discloses that an optical triangulation can be used or phase difference method or a time-of-flight method can be used for distance measurement.

The device defined in Claim 1 and especially the method defined in Claim 11 make possible the combination or the alternative use of a phase method and a time-of-flight method with an optical triangulation method.

The patent to Burlingham does not disclose these features of the present invention.

It is therefore believed that the new features of the present invention as defined in Claims 1 and 11 are not disclosed in the Burlingham reference and cannot be derived from it as a matter of obviousness, and therefore the Examiner's rejection of the claims over this reference under 35 USC 102(b) should be considered as not tenable and should be withdrawn.

Claims 1 and 11 and their rejection over the Born reference.

The Born reference discloses a proximity fuse, in particular for armour piercing anti-tank missles, which has a proximity sensor (11) combined with a capacitative or magnetic sensor (12). As specifically stated in the Born reference, for

example on page 11 starting from line 85, the optical sensor of the device disclosed in this reference determines the distance via the pulse time-of-flight or phase measurement of the reflected measuring radiation or a triangulation measurement.

The Born reference does not disclose a triangulation measurement via a modulated optical measurement radiation. In particular, the Born reference does not disclose a combination of a phase measurement with an optical triangulation measurement and does not contain anything which can make this combination obvious.

In contrast, the method in accordance with the present invention as defined in Claim 11 and the device in accordance with the present invention as defined in Claim 1, which carries out a distance measurement via a triangulation method by a modulated optical measurement radiation and is capable of doing so, performs distance measurements both via a triangulation measurement and also via a phase difference measurement, and this is not disclosed in the Born reference and also cannot be derived from it as a matter of obviousness.

Claims 1 and 11 therefore should be considered as patentably distinguishing over the Born reference as well and should be allowed.

Claims 2, 3, 6, 7, 8 and 12-14 and their rejection over the Burlingham reference or the Born reference.

These claims depend on claims 1 and 11 correspondingly they share the allowable features of claims 1 and 11, and they also should be allowed.

Arguments related to second ground for rejection to be reviewed on appeal

Claims 4, 5, 8, and 10 and their rejection under 35 USC 103 (a) over the Burlingham and Born references.

As for the rejection of Claims 4, 5, 8 and 10 under 35 USC 103(a) as being unpatentable over the Burlingham reference or Born reference, these claims depend on Claim 1, they share its allowable features, and it is respectfully submitted that they should be allowed as well, together with Claim 1.

Reconsideration of the Examiner's rejection of the claims, its reversal, and allowance of the claims in the present application is most respectfully requested.

Respectfully submitted,

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CLAIM APPENDIX

1. (original) A device for optical distance measurement, in particular a device functioning in accordance with the phase measurement principle, having at least one transmission unit (12) equipped with at least one light source (22, 24) for transmitting modulated optical measurement radiation (16) toward a target object (20), and having a reception unit (18) for receiving the optical measurement radiation (17) returning from the target object (20), wherein the device has means (51, 53, 55, 68) that enable a measurement of distances between the device and a target object (20´) by means of a triangulation method.

2. (original) The device as recited in claim 1, wherein the means include the light source (22, 24) of the transmission unit (12).

3. (original) The device as recited in claim 1, wherein the means include at least one position-sensitive sensor (55).

4. (original) The device as recited in claim 3, wherein the position-sensitive sensor (55) is a planar detector.

5. (original) The device as recited in claim 3, wherein the position-sensitive sensor (55) is a linear detector.

6. (previously presented) The device as recited in claim 3, wherein the position-sensitive sensor (55) also has the capacity to be used for time delay measurement of the modulated measurement signal (16, 17, 17′), in particular for a phase measurement of the returning measurement signal (17).

7. (original) The device as recited in claim 1, wherein the means (51, 53, 55, 68) include at least one set of projection optics (51).

8. (previously presented) The device as recited in claim 1, wherein the means (51, 53, 55, 68) include at least one circular aperture (53).

9. (previously presented) The device as recited in claim 1, wherein the device has at least one control and evaluation unit (58) for determining a distance of the device (10) from the target object (20, 20′) based on the phase shift of the optical measurement radiation (17) returning from the target object (20).

10. (previously presented) The device as recited in claim 1, wherein the device (10) has at least one mechanical, slidable measurement stop (72, 74).

11. (original) A method for optical distance measurement in which it is possible to switch back and forth between a phase measurement method for determining a distance of a distance measuring device from a target object (20, 20′) and a triangulation method for determining this distance.

12. (original) The method for optical distance measurement as recited in claim 10, wherein the same light source (22, 24) is used for the phase measurement method and the triangulation method.

13. (previously presented) The method for optical distance measurement as recited in claim 10, wherein the same modulated transmission measurement beam (16) is used for the phase measurement method and the triangulation method.

14. (previously presented) The method for optical distance measurement as recited in claim 10, wherein the same detector element (55) is used for the phase measurement method and the triangulation method.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.